THE DER WEEKLY

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Industry News

Residential Fuel Cells to be Tested in Chicago Area Homes

The Community Energy Cooperative and EPRIsolutions, a subsidiary of the Electric Power Research Institute, will install residential fuel cells that generate three to seven kilowatts of electricity in five Chicago area homes later this year. The homeowners will take part in a pilot project to assess the technical, economic, and environmental benefits of using fuel cells designed for single and multi-family dwellings. The project will involve procurement, baseline testing, installation, interconnection, and test monitoring. EPRIsolutions will provide technical management, test monitoring support, and educational material on fuel cell technology. *EPRI News Release*, May 10

New Transmission Line Officially Opened in TX

TXU Electric and the Electric Reliability Council of Texas hosted a dedication to open a new 88-mile electricity transmission line on May 14. The double-circuit 345 kilovolt line cost $62 million, is the largest built in Texas over the past 20 years, and increases the amount of electricity that can be moved from south to north Texas from about 2,000 MW to about 4,000 MW. It was built by TXU Electric and runs from Dallas to the Houston area. The Public Utility Commission approved the transmission line in November 1999, and TXU Electric completed the construction in May 2001, one year ahead of the scheduled date. *PR Newswire*, May 14

Fuel Additive Now Available on Commercial Market

Clean Diesel Technologies, Inc.'s diesel fuel additive, Platinum Plus®, created to reduce potentially harmful emissions, has been made available commercially for the stationary power generator market. According to Clean Diesel Technologies, the additive can help reduce emissions of particles, hydrocarbons, and carbon monoxide by 15-30 percent when used in current diesel fuels or ultra-low sulfur diesel and can also improve fuel economy. Over the past 12-18 months of testing, Platinum Plus® has been proven effective in four large stationary generators supplying electric power in Maine, reducing particulate matter by 45 percent and NO_x by 15 percent in combination with simple engine modifications. *Powermarketers.com*, May 15

CEC Funds Research on Composite Reinforced Aluminum Conductor

The California Energy Commission (CEC) funded a group of researchers in California to develop a composite reinforced power cable that can improve transmission rates while simultaneously serving as a fiber optic cable for communications. According to researchers, the composite material could increase transmission rates by 15 percent. The dual-use cable will be tested on a 222,000-volt line in Southern California Edison's grid. In addition to $1 million invested by the CEC, the project was also supported by the U.S. Department of Energy and the California Technology Investment Program. *Environmental News Network*, May 15

CHP Plants Calling for Government Protection in The Netherlands

After the bankruptcy of Berkelcentrale Beheer BV, a 60 MW combined heat and power (CHP) plant in The Netherlands, the Dutch government is coming under pressure to help protect CHP producers. Cogen Nederlands, the Dutch affiliate of the Cogen Europe CHP lobbying group, is calling for additional government subsidies to help avoid further bankruptcies. With rising gas prices and a reduction in subsidies, some smaller CHP plants have become uncompetitive in the liberalised market. Approximately 40% of Dutch power was produced in CHP plants before liberalisation. In addition to The Netherlands, Germany and Spain have reported closures of CHP plants due to difficulties experienced in competitive markets. *Financial Times*, May 15

Southern States Power Company to Provide UC-Riverside with Standby Generators

On May 16, Southern States Power Company, Inc., (SSPC) announced it has received a purchase order from the University of California, Riverside to provide 6 MW of standby power using biodiesel-fueled generators. According to SSPC, this is the first time 100% biodiesel-fueled power has been generated on a commercial scale in California. SSPC will provide fuel for

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three 2-MW generators, and the City of Riverside's Department of Public Utilities will house the generators at its Waste Water Treatment Facility. *Southern States Power Company Press Release*, May 15

Volt Inc. Buys Wind Farm for Assets Towards Construction of New Wind Facility

On May 16, Volt Inc. announced its purchase of a wind farm to be used as equity to construct a new wind facility near San Francisco. The physical assets were valued at about $14.8 million and consist of approximately 1100 95 kW wind turbines, a 37.5 MV substation, capacitor banks, transformers, 305 miles of transmission lines, and a 5,000 square foot operations building. Volt Inc. intends to install new 900 kW turbines that should generate electricity at 4.5 cents per kW. The first phase of 60 MW is expected to cost $68 million. *PR Newswire*, May 16

Metallic Power Ships 1.5 kW Portable Fuel Source for Testing and Evaluation

Metallic Power, a developer of zero-emission, regenerative zinc/air fuel cells, has shipped the first of its 1.5 kW portable power sources to Briggs & Stratton Corp. for testing and evaluation. The two companies are working together to evaluate a fuel cell power source. For the rest of the year Metallic Power will continue preliminary field trials of applications of portable power; emergency backup power for computers, networks, and telecommunications equipment; and vehicular power. The company plans to conduct beta testing in 2002 and expects to launch its initial product late next year. *Metallic Power News Release*, May 14

FPL Energy to Construct Kansas Wind Farm

FPL Energy announced on May 16 that it plans to build, own, and operate the largest wind project in Kansas. The facility will include 170 wind turbines with a generation capacity of 110 MW and will be located in Southwest Kansas. The electricity output will be sold to UtiliCorp United under a multi-year contract. Construction of the wind farm will begin shortly and is expected to be completed by the end of this year. *Powermarketers.com*, May 16

DOE News

U.S. DOE Signs Agreement with EU for Cooperative Research on Fuel Cells

On May 14, U.S. Secretary of Energy Spencer Abraham and European Union Commissioner for Research Philippe Busquin signed an agreement to conduct joint research in the areas of non-nuclear energy and fusion energy. According to a DOE press release, the agreement covers "a wide range of potential cooperation in fossil energy, renewable energy and energy efficiency with an immediate focus on fuel cell technology and carbon sequestration." *U.S. Department of Energy Press Release*, May 14

Battery Community Hears of Vast Market Potential

The annual Battery User's Conference, Battcon 2001, held in Boca Raton, FL, April 30-May 2, 2001, was attended by approximately 250 managers of battery backup facilities for telecommunication stations, internet service providers, and high tech production lines as well as representatives of the battery industry. Dr. Imre Gyuk from the Office of Distributed Energy Resources presented the keynote address on "Reliability and Power—Vistas for Energy Storage." The talk outlined the multi-gigawatt market potential of energy storage for both reliability and arbitrage, which is generated by price volatility and the requirements of the digital economy. The presentation also addressed the complementarines between storage and distributed generation, which is becoming increasingly important as the reliability of the electrical grid decreases due to lack of new generation and prevalent transmission congestion.

Regional Office News

Atlanta Regional Office Attends "Powering the South" Workshop

The Renewable Energy Policy Project (REPP) initiated a study, the Powering the South (PTS) Research Project, which will identify and analyze opportunities for renewable energy and energy efficiency in the southern U.S., including Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee. A workshop was held May 10 in Atlanta to discuss research, policy, and outreach for the study, which includes electricity market simulation modeling, a technical assessment of cost-effective energy efficiency opportunities, a technical and economic assessment of renewable resource potential, and policy development for overcoming market barriers. Outreach and research teams were set up, and REPP's team enlisted assistance from a professional media organization to target Southern and national media outlets. Steve Smith, director of Southern Alliance for Clean Energy, facilitated the meeting. In attendance were numerous stakeholders including project consultants, technology providers, and W. Dwight Bailey and Terri Roberts of ARO.

BRO's "A Consumer's Financial & Technology Guide to Solar Energy Systems"

Revised and available on the Boston Regional Office's website (www.eren.doe.gov/bro) is "A Consumer's Guide to Solar Energy Systems," written for consumers interested in installing residential photovoltaic or solar water-heating systems. The guide provides a brief description of incentives, grants, loans, and potential services available from Federal, non-federal and state resources and contact information for Boston area constituents.

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BRO Assists Mohegan Tribe with Acquisition of Two Fuel Cells

On May 10, Albert Benson of BRO attended a meeting in Uncassville, Connecticut, to progress the acquisition of two additional fuel cells. The Mohegan Tribal Council has already approved the acquisition and funding of two ONSI fuel cells for installation this year. Work is now being advanced toward the acquisition of two more fuel cells using molten carbonate technology. Facility construction is underway to house and operate up to six fuel cells. Integrated energy efficiency of these units should be high, as all high and low temperature heat can be used in operations adjacent to the fuel cell facility.

Colorado Rural Electric Coop Hosts Fuel Cell Workshop

Steve Sargent from the Denver Regional Office attended the "Fuel Cells and Our Future" workshop at the Delta-Montrose Electric Association (DMEA) headquarters in Montrose, Colorado, on May 11. Specific topics covered include: "Distributed Generation Opportunities and Utilities in the 21st Century," "Improved Fuel Cell Economics Through Co-Generation (Heat and DHW)," and "Leveraging Fuel Cell Power with GeoExchange Heating and Cooling Systems." The workshop drew a larger-than-expected attendance, and 50 prospective attendees had to be turned away because the lecture hall has the capacity for only 95. After the workshop, attendees were invited to a reception sponsored by the Montrose Homebuilders' Association.

Policy News

Comprehensive Plan Makes Recommendations for National Energy Policy

The comprehensive energy plan released on May 17 by the National Energy Policy Development Group headed by Vice President Dick Cheney provides suggestions for a national energy policy. The report addresses energy challenges the U.S. faces and provides 105 recommendations for resolving short and long term issues. The 107-page document lays out three principles the national energy policy should follow:

1. Focus on a long-term comprehensive strategy.
2. Advance new, environmentally friendly technologies to increase energy supply and encourage cleaner, more efficient energy use.
3. Seek to raise the living standards of the American people by integrating energy, environmental, and economic policies.

The Development Group also set up five national goals that can be met by applying the above principles:

1. Modernize conservation
2. Modernize our energy infrastructure
3. Increase energy supplies
4. Accelerate the protection and improvement of the environment
5. Increase our nation's energy security

Approximately **15 of the recommendations are focused on distributed energy resources,** including suggestions to encourage the development of combined heat and power, reduce delays in geothermal lease processing, expand tax credits for electricity from wind and biomass facilities, provide tax credits for residential solar energy property, and focus R&D efforts on hydrogen and fuel cells. The report is available at www.whitehouse.gov/energy.

Minnesota House Passes Energy Bill

The Minnesota House has approved an energy bill that would streamline regulations and procedures for building new power plants and continue existing energy conservation requirements for utilities. New procedures could make it less expensive and time consuming to build more power plants and transmission lines in the state. The bill encourages more electricity generation from renewable energy sources such as wind and biomass through a market-based "green pricing" system that will be offered to consumers in a few years. The bill is awaiting action in the conference committee. *Star Tribune*, May 15

Environmental News

Connecticut College 100% Committed to Support Green-e Certified Renewable Energy

Students at Connecticut College raised funds and successfully campaigned for an increase in student activity fees in order pay for the costs involved in committing 100 percent support to Green-e Certified renewable electricity. The college joined the Connecticut Energy Cooperative, which will provide services through its EcoWatt™ program, offering electricity at a price lower than the college's current electricity rate. According to the co-op, the school's purchase of renewable electricity will reduce its sulfur oxide emissions by 17,254 pounds per year, its nitrogen oxide emissions by 3,612 pounds per year, and its carbon dioxide emissions by 2.3 million pounds per year. *Business Wire*, May 15

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By the Numbers

31	Percent decrease in key air emissions since 1970
85	Percent decrease in carbon monoxide emissions from cars since 1970
98	Percent decrease in lead levels in ambient air since 1970

National Energy Plan Overview, May 17, 2001

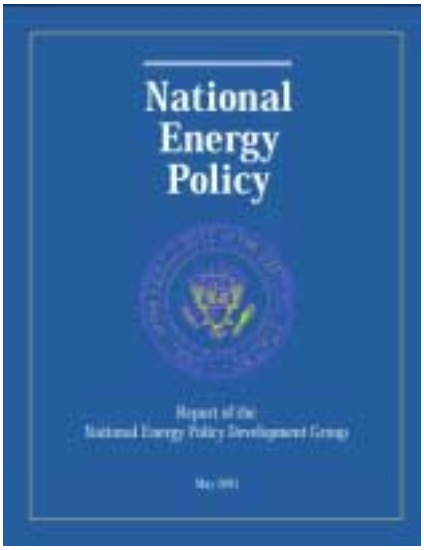
You can save energy by closing the fresh air intake on your air conditioning unit. Cooling fresh, warm outside air requires more electricity than re-cooling the air that is already circulating in your home.*

The National Energy Plan's Discussion of Distributed Energy Resources

In its report to President George W. Bush, the National Energy Policy Development Group (NEPDG) headed by Vice President Dick Cheney discusses the potential opportunities distributed energy resources (DER) provide and addresses the barriers that the technologies face. Among the group's 105 recommendations for a national energy policy, approximately 15 recommendations are specifically focused on DER.

The NEPDG discusses some of the advantages of distributed energy resources, such as their ability to reduce peak demand loads, bypass congested areas of transmission, and to be brought on line more quickly than new central power plants.

The report states that efficiency gains from DER come from three sources: reduction in transmission and distribution line losses, feasibility of using waste heat, and integration of onsite energy efficiency and generating capabilities.



Barriers discussed in the document include the lack of standards governing interconnection to the grid, current air quality regulations that do not account for additional energy savings from DER, lengthy siting and permitting processes, high first costs associated with load management integrating systems, and the need for net metering.

Specific distributed energy resources mentioned in the report include microturbines, fuel cells, biomass, solar, combined heat and power, geothermal, wind, high temperature superconductivity (as a technology that will increase access to energy), and hydrogen (as a fuel for DER technologies).

Microturbines are referred to as a technology that offers a number of "significant advantages" over other small-scale power generators. These include having a small number of moving parts, compact size and light weight, optimal efficiency, lower emissions and electricity costs, and the ability to use waste fuels. The report states that "microturbines could easily capture a significant share of the distributed generation market." (page 6-4)

The NEPDG suggests R&D efforts focused on fuel cells and hydrogen and support for legislation reauthorizing the Hydrogen Energy Act. The report states that fuel cells are unique because they use fuel without combustion, making them "extremely clean and efficient." Hydrogen fuel cells are described as "a promising type of distributed energy system that can provide the exacting reliability needed for the high-tech industry." (page 6-11) The NEPDG also states that "in the long run, alternative energy technologies such as hydrogen show great promise." (page 6-10)

Biomass materials are discussed as sources of fuel for transportation and electricity generation. The report suggests that the Section 29 tax credit should be expanded to make it available for new landfill methane projects, that tax credits for electricity produced from biomass should be extended, and that biomass sources should be expanded to include forest-related, agricultural, and certain urban sources.

Recommendations are also made for solar and geothermal. The NEPDG recommends legislation to provide a new 15 percent (up to $2,000) tax credit for residential solar energy property. The group also suggests reducing delays in geothermal lease processing as part of the permitting review process.

A wind recommendation includes expanding and extending the tax credit. In addition, the report states that "wind and natural gas hybrid systems are a promising approach that offers clean power to consumers." (page 6-6)

Combined heat and power (CHP) is mentioned in several sections of the report. Its environmental benefits are discussed, as well as the technology's efficiency and cost savings in industrial boilers, energy systems, and small scale buildings applications. The NEPDG states that "CHP is also one of a group of clean, highly reliable distributed energy technologies that reduce the amount of electricity lost in transmission while eliminating the need to construct expensive power lines to transmit power from large central power plants." (page 3-5)

Recommendations on CHP include encouraging increased energy efficiency through CHP projects (by shortening the depreciation life or providing an investment tax credit), working with local and state governments to promote the use of well-designed CHP at brownfields sites, and promoting CHP through flexibility in environmental permitting. The report also suggests encouraging the development of CHP units that are highly efficient and have low emissions in order to shorten the time needed to obtain each permit, provide certainty to industry by ensuring consistent implementation, and encourage the use of the technology.

Installing an attic fan that is controlled by a thermostat to evacuate the hot air in your attic can greatly improve the comfort of your home.*

CALENDAR OF EVENTS

Date	Event	Location	Other Information
		MAY 2001	
21-23	Third Annual ICEPAG Conference	Newport Beach, CA	www.parcon.uci.edu/colloquium
22-24	Redefining Deregulation: Expect the Unexpected	Kansas City, MO	www.naesco.org
24-25	Conference on Hybrid Systems	Newport Beach, CA	www.parcon.uci.edu/colloquium
30-31	Fuel Cells Codes & Standards Summit V	College Park, MD	ronald.fiskum@ee.doe.gov
31	Idaho Geothermal Energy Stakeholders Workshop	Boise, ID	www.eren.doe.gov/geopoweringthewest
		JUNE 2001	
3-6	FEMP Energy 2001 Conference	Kansas City, MO	www.energy2001.ee.doe.gov
3-7	WindPower 2001 Conference	Washington, DC	www.awea.org; laura_keelan@awea.org
3-8	7th International Symposium on Solid Oxide Fuel Cells	Tsukuba, Ibaraki, Japan	sofc7@nimc.go.jp (National Institute of Materials and Chemical Research)
4-6	Advanced Technology Program National Institute of Standards and Technology — National Meeting	Baltimore, MD	www.atp.nist.gov/nationalmeeting
4-7	ASME Turbo Expo-Land, Sea, Air	New Orleans, LA	www.asme.org/igti; Debbie Haught is organizing microturbine a panel.
4-7	International Joint Power Generation Conference & Expo	New Orleans, LA	www.asme.org/conf/ijpgc01; Debbie Haught is presenting.
11	Fuel Cell Transportation Technology Summit	San Jose, CA	Sandra Gadzia; gadzia@sae.org
11-13	International Symp. on DG: Power System & Market Aspects	Stockholm, Sweden	www.ekc.kth.se/ees/workshop/DG.htm
13-15	Natural Gas and Power Generation Strategies: Solving the Natural Gas and Energy Crisis	Tucson, AZ	www.intertechusa.com
17-20	11th Canadian Hydrogen Conference: Building the Hydrogen Economy	Victoria, BC, Canada	www.iesvic.uvic.ca/cha (Canadian Hydrogen Association)
18-20	APPA National Conference	Washington, DC	www.appanet.org
21-22	Fundamentals of Energy Management	Memphis, TN	Sponsored by FEMP and Association of Energy Engineers www.aeecenter.org/seminars
26	Congressional Fuel Cell Exposition	Washington, DC	More information will be available at a later date.
27-28	TN Wind Workshop	Knoxville, TN	W. Dwight Bailey 404-562-0564

Certain reflective films can be used on windows to screen out the hot rays of the sun without reducing the amount of light you receive.*

CALENDAR OF EVENTS

JULY 2001			
9-13	4th International Symposium on New Materials for Electrochemical Syst.	Montreal, Quebec	www.newmaterials.polymtl.ca/eng/congres
10-12	Gas Storage Workshop	Kingston, Ontario	David Quinn; quinn-d@rmc.ca
16-19	2001 National Workshop on State Building Energy Codes	Burlington, VT	www.eren.doe.gov/buildings/codes_standards/buildings/2001natl_workshop.html
24-27	ACEEE Summer Study	Tarrytown, NY	www.aceee.org; Rebecca Lunetta; 302-292-3966
30 - Aug. 1	Green Power Conference	Portland, OR	Tina Kaarsberg, tina.kaarsberg@ee.doe.gov; megan_maguire@nrel.gov
AUGUST 2001			
21-24	International Energy Program Evaluation Conference	Salt Lake City, UT	608-835-6880; marymcc@tds.net
29-30	Integrated Energy Efficiency Conference and Facilities Management and Maintenance Expo	Cleveland, OH	www.aeecenter.org
29-Sep. 3	IEEC Integrated Energy Efficiency Congress	Cleveland, OH	Sponsored in part by FEMP; www.aeecenter.org
SEPTEMBER 2001			
11-13	7th Grove Fuel Cell Symposium	London, UK	www.grovefuelcell.com
17-21	Fifth Biomass Conference of the Americas	Orlando, FL	www.fsec.ucf.edu/bioam; dee_scheaffer@nrel.gov
24-26	Powering the Future—New Strategies and Solutions for Deploying Distributed Power in the Marketplace	Chicago, IL	www.intertechusa.com
30 – Oct. 5	UPEx'01: The Photovoltaic Experience Conference & Exhibition	Sacramento, CA	Jjudd@ttcorp.com; Hosted by Sacramento Municipal Utility District; includes distributed energy technologies workshop
OCTOBER 2001			
14-17	National Center for Photovoltaics Program Review	Lakewood, CO	barbara_ferris@nrel.gov, 303-275-3781
24-26	World Energy Engineering Congress	Atlanta, GA	www.agcc.org (includes CHP Expo www.aeecenter.org)
24-27	Excellence in Building 2001	Orlando, FL	www.eeba.org/conference

Upcoming RFP on Adoption and Implementation of DER in High-tech Data Industries

Oak Ridge National Laboratory is interested in obtaining expressions of interest related to an upcoming solicitation that will seek to encourage further adoption and implementation of DER in the data processing and telecommunications industries. Utilization of DER to provide efficient thermal resources as well as electrical power is desirable. Desired applications include, but are not limited to, telecommunication centers, commercial data processing centers, and Internet and large corporate computer service centers. In addition to DER implementation projects, assessments of existing or proposed high-tech DER installations, improved project design tools, and development of innovative methods to integrate DER into high-tech applications will be considered. Cooperative/collaborative projects are encouraged. A minimum of 50% cost sharing is required. The anticipated Request for Proposal (RFP) release date is June 2001. If you would like to receive the RFP, please submit an expression of interest (EOI) by e-mail to Cecilia Jones (jonescf@ornl.gov). Your EOI should include your name, company name, address, telephone number, fax number, and your e-mail address.

Source: Tips for keeping cool from the Long Island Power Authority at *www.lipower.org/53ways.html